

3. TECHNICAL SPECIFICATIONS

3.1 GENERAL REQUIREMENTS

- A. These technical specifications are intended to provide a general description for a small light-duty, wheelchair lift equipped, cutaway bus.
- B. The bus will be used in DCSS's scheduled service to transport ambulatory, senior, persons with disabilities, and wheelchair bound riders in the Dolores County service area.
- C. Vehicles shall be of the "body on chassis" type and will involve construction of a body on a light-duty cutaway van or truck chassis. The vehicle body shall be a body manufactured by a body manufacturer for transit application, not "converted" or "modified" to a transit vehicle from a sports van, passenger van or wagon, delivery vehicle, school bus, recreational vehicle, or similar vehicle.
- D. Bus shall be current model year production.
- E. The price quoted shall include all items of labor, material, tools, equipment, and other costs necessary to fully complete the manufacture and delivery of the vehicle pursuant to these specifications. The Proposer shall assume sole responsibility for the entire vehicle as to warranty and after-sales parts and service.
- F. All units or parts used in the assembly of the final product shall be manufacturer's best quality and shall conform in material, design or workmanship to the best practice known in the transit industry. All parts shall be new and in no case shall used, reconditioned or obsolete parts be accepted. Unless otherwise specified, all items listed as OEM parts or equipment means that those items shall be/were made by or purchased and installed by the chassis manufacturer, not the final stage manufacturer.
- G. The vehicle shall meet all applicable Federal Motor Vehicle Safety Regulations (FMVSS), Federal Motor Carrier Safety Regulations (FMCSR), and Environmental Protection Agency (EPA) regulations in effect at the date of manufacture and the Manufacturer shall so certify.
- H. The vehicle shall comply with all federal, state, and local regulations including Altoona test certification requirements. The vehicle shall also comply with all standards of the Americans with Disabilities Act (ADA) and its implementing regulations in effect at the date of manufacture.

- I. In the event of any conflict between the requirements of this Specification and any applicable legal requirements, then the legal requirements shall prevail.
- J. Wherever brand, manufacturer, or product names are used, they are included only for the purpose of establishing a description of minimum quality of the item. When brand names are used, the term "or approved equal" should follow and is incorporated herein.

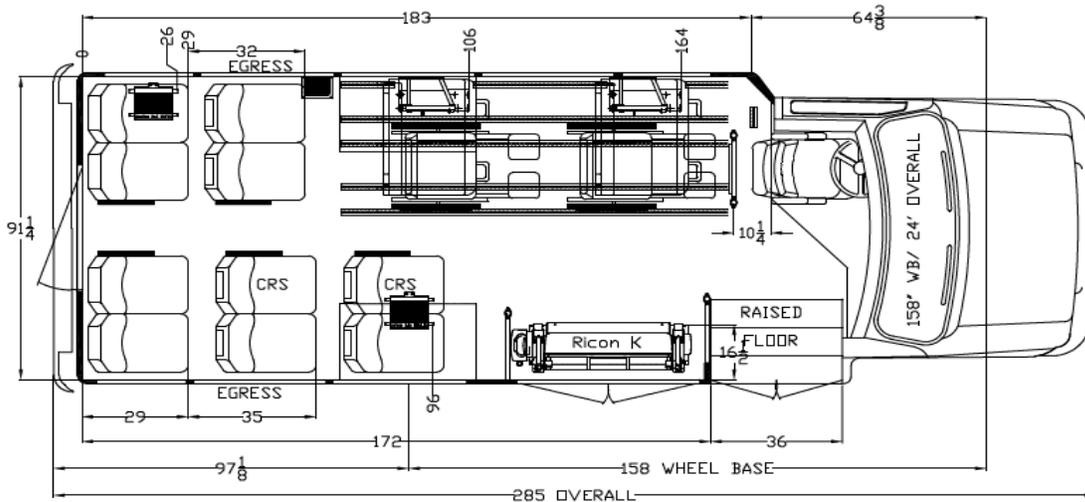
3.2 OVERALL BUS DIMENSIONS

A. Seating Capacity

- 1. Ambulatory = 14 maximum, excluding driver
- 2. Wheelchair = 2 wheelchairs maximum

B. Seating Floorplan

Below is the desired floorplan requested by DCSS. Proposals should include a proposed floorplan based on specifications and manufacturer's requirements.



C. Length

The length of the vehicle shall be the minimum necessary to satisfy the specified seating configuration while meeting all applicable FMVSS and chassis manufacturer requirements for weight distribution.

D. Width

- o Exterior (maximum) 102 inches
- o Interior (minimum) 92 inches *

*The minimum interior width shall be measured 12 inches above the floor in the passenger area.

3.3 BODY AND ROOF REQUIREMENTS

A. Fasteners

1. All fasteners utilized in the assembly and construction of coaches, sub-assemblies, or components procured shall comply with all applicable Federal, and State law and shall be appropriate for the intended application.
2. Fastener materials shall be compatible with materials being fastened. Where self-tapping fasteners are used, body panels shall be reinforced with steel backing, aluminum backing, or stainless steel backing.

B. Structure

1. The body shall be constructed to provide maximum protection to passengers in case of rollover accident or a crash accident to the side or rear of the bus.
2. The vehicle body shall incorporate *primarily* prime commercial quality zinc-coated steel, aluminum-coated steel, stainless steel, galvanized steel, aluminum, or aluminum alloy.
3. All joints and corners where stress concentration may occur are to be adequately reinforced to fully withstand the required loads and road shock that a vehicle of this type is exposed to in rural environments, and the body must retain its integrity in a rollover situation.
4. Front body caps shall be constructed of solid one-piece reinforced molded fiberglass, bonded and sealed to the vehicle body to prevent the penetration of moisture into the interior.

C. Roof Construction

1. Roof super-structure shall be 1-piece seamless construction. Roof panel shall lap side panels by minimum of 1 inch to preclude water leakage into the vehicle. Panels shall be riveted, bonded or welded to the superstructure. The roof construction shall be of sufficient strength to prevent vibration, drumming or flexing. The roof is to be designed and installed in a professional manner that is smooth and without bumps, waves or has an imperfection due to installation or material that will not allow the pooling of water.

D. Exterior Seams

1. All exterior seams shall be constructed in such a manner as to shed water and exterior panels shall have lap joints.
2. In no case shall sealing of panels be dependent on caulking alone. No water leaks in the body will be acceptable.

E. Body

1. The body shall be free of cracks, dents, defects, or physical damage. Vehicle body shall be constructed in a manner that minimizes vibrations, rattles, and other body noises during normal use.
2. All nuts, bolts, clips, washers, and clamps, including those that would be exposed to the elements on the exterior and interior of the unit, shall be zinc or cadmium plated, phosphate coated or stainless steel to prevent corrosion. Minimal use of sheet screws is permitted.
3. Fenders and splash aprons (underskirt) of durable construction shall be provided to provide maximum deflection of the wheel splash. There shall be sufficient wheelwell clearance for snow chains.
4. Front and rear mud flaps are required.
5. Roof gutters shall be installed over the windows and doors. Gutters shall be designed so as not to spill water on driver's exterior mirrors and intermediate drain holes shall not drain water on windows and doors when open or closed.
6. The entire underside of the body including floor members, side panels below floor level (if metal), and fender wells shall be undercoated, at the time of manufacture, with a nonflammable resin type polyolefin undercoating for bus applications. All openings in the floorboards and firewall shall be sealed. Care shall be taken to prevent overspray of electrical cabling, air, brake and fuel hoses.
7. Two rear tow hooks shall be provided, accessible under rear bumper. The towing devices shall be adequate in design and construction to permit towing the vehicle without distortion or failure.
8. All brackets, bolts, nuts and miscellaneous fasteners for attaching front and rear license plates to the vehicle shall be provided by the successful Proposer and mounted/bracketed prior to delivery. License plate holder for the rear to be illuminated by LED light.
9. Body is required to be water tested upon completion at the manufacturer location to ensure there are no water leaks of exterior seams, roof construction or overall structure. Testing shall be done with water nozzles appropriately placed to test the entire conversion. A certification of the water test result shall be submitted with the delivery of the vehicle.

F. Insulation

1. Equivalent to 1½ inch fiberglass shall be installed in the roof, rear wall, front and rear caps, sidewalls, and extended door sections including lift doors, minimum value R7 or above. If additional insulation is necessary to meet the requirement, the insulation shall be glued to the chassis body to prevent sagging.
2. Any insulation material used between the inner and outer panels shall be sealed or self-sealing to minimize entry and/or retention of moisture. Insulation properties shall be unimpaired during the service life of the bus. Any insulation material used inside the engine

3.4 GAS ENGINE - TRANSMISSION

A. Gas Engine

1. 6.8 liter V-10 gas engine.
2. Electronic fuel injection (EFI) fuel management system.
3. A chassis manufacturer's auxiliary engine oil cooler shall be provided if available from the chassis manufacturer. Aftermarket oil cooler shall not be accepted.
4. The coolant recovery kit shall be OEM standard and be filled with permanent ethylene glycol base antifreeze to protect the cooling system to -34°F.
5. Factory engine block heater. Plug mounted to bumper or body.
6. Replaceable pleated, paper element type, air cleaner.
7. Magnetic hex head drain plug on the oil pan.
8. Replaceable full-flow type oil filter easily reached without removal of any major component.
9. A combined high idle and lift interlock with electrical load control, Intermotive HighLock or approved equal.

B. Transmission

1. Automatic transmission with overdrive, latest model available.
2. A chassis manufacturer's heavy-duty auxiliary transmission oil cooler shall be provided if available from the chassis manufacturer. Aftermarket oil cooler shall not be accepted.
3. Oil pan with magnetic drain plug and re-usable gasket if available from the chassis manufacturer. Aftermarket oil pan shall not be accepted.
4. The vehicle shall be equipped with an audible warning device that is activated when the vehicle transmission is engaged in reverse and continues as the vehicle is being backed up. This should be located behind the rear axle of the vehicle and all wires should be enclosed and secured.

C. Steering

1. Power steering.
2. Chassis manufacturer's tilt and energy-absorbing steering column/wheel.
3. OEM installed cruise control.

D. Emissions

1. The vehicle shall be equipped with a heavy duty, corrosion resistant exhaust system which meets or exceeds FMVSS and EPA noise level and exhaust emission (smoke and noxious gas) requirements, including all State of Colorado requirements, whichever are more stringent.

2. Heavy duty exhaust hangers shall be standard equipment and bolted to the frame. All hanger U-bolt thread orientation must be directed sideways. All exhaust system modifications shall use the exact type, size and gauge material as the OEM exhaust system. The use of flex pipe for exhaust modification is not be permitted. There should be enough tailpipe hangers to adequately support the entire system.
3. The exhaust pipe discharge shall be at the rear street side corner of the vehicle (behind the rear axle). Exhaust pipe should exit at least 12" behind the fuel tank. Location and mounting of exhaust should be such that the exhaust pipe is not damaged during normal vehicle operation, which includes traveling in and out of steep driveways or dirt/gravel parking areas located in rural Colorado.

5. Fuel System

1. Fuel tank shall have the maximum capacity offered by the manufacturer.
2. The chassis OEM fuel system shall not be modified. Any fuel tank breached during modification shall be removed and replaced with a new fuel tank. Access to the fuel tank from vehicle exterior must consist of an enclosed area via a metal fuel door, exposed fuel tank caps are not acceptable. The fuel tank must contain a **full tank** of fuel upon delivery to DCSS.

6. Electrical

1. The vehicle is to be equipped with an OEM or approved equal 225 extra heavy-duty amp alternator with an integral voltage regulator and easily accessible for maintenance and repair.

Proposer Meets Section 3.4 Specifications	
Yes	
No	
Noted Deviations (list all section deviations for consideration here):	

3.5 FINAL DRIVE

- A.** A differential ratio, appropriate for maintaining legal highway speeds without excessive strain on the engine and transmission, yet capable of providing adequate, safe acceleration from a stop, shall be provided.
- B.** The drive shaft, bearing and U-joint shall be the OEM’s standard for the GVWR specified. One or more protective metal guards for the drive shaft are required to prevent any section of the shaft from entering the vehicle or striking the ground in case of failure, in accordance with 49 CFR Part 393.89. Guards shall be 3/16-inch thickness steel (minimum) bolted to the frame.

Proposer Meets Section 3.5 Specifications	
Yes	
No	
Noted Deviations (list all section deviations for consideration here):	

3.6 SUSPENSION SYSTEM

- A.** Front axle shall be manufacturer’s standard. It must be load rated for GVWR provided.
- B.** Coil springs shall be provided in the front. Springs shall be progressive to give an acceptable ride under various load conditions.
- C.** Front shock absorbers shall be heavy-duty double acting gas filled, and load rated, capable of controlling the ride when the vehicle is empty, as well as when loaded to the GVWR. Highest rating available from OEM.
- D.** A limited slip rear axle to perform in slick road conditions and allow when one rear wheel is slipping the other wheel(s) will engage will be provided.
- E.** The rear suspension system must include OEM Load Leveling Suspension (SER) to maintain a level position once loaded to full capacity without affecting the ride quality. Front and rear stabilizer bar shall be provided, if available from the original chassis manufacturer.

- F.** Rear suspension system shall include MORryde RL or approved equal.
- G.** Frame height should be equal on both sides of the vehicle, requiring additional springs to compensate for lift weight, regardless of lift position.

Proposer Meets Section 3.6 Specifications	
Yes	
No	
Noted Deviations (list all section deviations for consideration here):	

3.7 TIRES AND WHEELS

A. Tire Requirements

1. Vehicles shall be equipped with seven (6 + 1 spare) premium tubeless, steel belted, black sidewall, all-weather radial tires, the largest size available from the OEM for GVWR specified.
2. All tires shall be electronically spin balanced to a minimum speed of 65 MPH.
3. The inside dual tires mounted on the rear axle shall have air valve extensions.
4. One appropriate size jack will be provided with the spare tire.

B. Wheel Requirements

1. Vehicles shall be equipped with the heaviest duty 16 inch (minimum), 1 piece ventilated steel wheels recommended for the GVWR and tires specified. All wheels shall be interchangeable.
2. One (1) spare wheel, matching the wheels on the bus with an identical tire, shall be supplied with the bus.
3. The chassis manufacturer's lug nut indicators if available from the chassis manufacturer shall be installed on all wheels.

Proposer Meets Section 3.7 Specifications	
Yes	
No	
Noted Deviations (list all section deviations for consideration here):	

3.8 BRAKES

- A.** Brakes shall be hydraulic self-adjusting power front and rear discs with an anti-lock ABS system. Traction control required. The braking system shall comply with FMVSS 105 and FMVSS 106.
- B.** The braking system shall be heavy duty and the largest offered by the manufacturer for the GVWR specified.
- C.** Parking brake shall be standard manufacturer's mechanical type, independent of the vehicle's service brake system. It may be a heavy-duty hand or foot-operated parking brake with a warning light on the dashboard.
- D.** The brakes shall be free of objectionable noise or squeal when applied.

Proposer Meets Section 3.8 Specifications	
Yes	
No	
Noted Deviations (list all section deviations for consideration here):	

3.9 ELECTRICAL SYSTEM

A. The vehicle shall be supplied with an alternator-powered 12-volt electrical system.

B. Battery

1. Two (2) heavy-duty 12 volt batteries, with a combined 1150 CCA minimum for gas engines. The batteries shall be lead acid premium construction and maintenance free. The positive and negative terminals shall be of different size on the same battery to prevent incorrect cable installation. All battery terminals shall be coated with an anti-corrosion and sealant protector.
2. Both batteries shall be located in a lockable box mounted on the curbside of the bus unless the Chassis manufacturer requires otherwise. This battery box shall include a slide out tray that securely locks in the stowed position. Box location should be no lower than the bottom of the entry door. The battery box shall be sealed to prevent road debris, dust, rain, snow or other forms of precipitation from entering the box, but shall not be air tight for safety reasons.
3. The battery box slide out tray shall be made of stainless steel. The battery tray slides shall have the ability to carry twice the weight of the bus batteries. The battery *tray* shall have adequate drain holes (a minimum of two). The battery *box* shall also be equipped with drain holes preferably adjacent to the battery tray drain holes when the tray is in the stowed position. The tray shall have the ability to extend a minimum of 3 inches beyond the opening of the battery compartment. Battery hold-downs should be properly sized and prevent the battery from shifting or moving in the battery tray which may require shift blocks made of an insulated material to prevent corrosion. Battery box must be designed with full support under the tray.
4. Two thumb-release latches that will rotate 180 degrees from the closed position shall secure the battery compartment door. The battery compartment door shall swing up at a minimum 60 degrees to the horizontal plain. A chrome retractable latch shall hold the door in the open position. A diagram showing the configuration of the battery cable installation shall be installed to the inside of the battery compartment.
5. Battery cables shall be long enough to allow specified pull out extension and shall be protected and flexible enough to fold away when stowed without shorting. Battery cables installed in place of chassis manufacturer's battery cables must be a heavy duty, continuous run, and sized to match the electrical systems maximum draw.

C. Wiring

1. Original manufacturer's vehicle wiring shall remain unchanged to the greatest extent practicable consistent with the requirements of these specifications. All add-on electrical components controlling the power to the bus body electrical circuits shall be located in a separate electrical junction box. The junction box shall be easily accessible through a hinged lockable door.
2. All body harnesses shall join on a terminal strip made of a high strength dielectric material.
3. Wiring and terminals shall meet or exceed current Federal and State vehicle requirements and be amply sized for both mechanical strength as well as to carry required currents without significant voltage drops.
4. All wiring, including chassis manufacturer's, shall be enclosed in non-metallic loom meeting current SAE Standard J762a and be adequately supported by fully insulated "P" clamps with a minimum spacing of every 24 inches and routed for protection from heat, moisture, solvents, corrosion, road debris, abrasion and tension.
5. All non-OEM wiring connections greater than 10-gauge shall be properly crimped, soldered and sealed with heat shrink tubing. Crimping by hydraulic crimper or electrical crimper that fuses the connector and the wiring is acceptable in lieu of soldering.
6. The bend radii of all installed electrical wires and cables shall not exceed the manufacturer's recommended minimum bend radii.
7. All parts of the wiring system and electrical components shall be protected from corrosion. All connectors installed on the underside of the vehicle and/or exposed to any outside element shall be double insulated.
8. There shall be no exposed or loose wiring in the driver or passenger compartment. Any bus body wiring harnesses containing exposed excess lengths shall have the excess length neatly gathered and secured to a rigid bus body or chassis frame member.
9. Protective grommets shall be provided at points where wiring penetrates metal or other material.
10. All wires shall be color coded or numbered every 6 inches maximum to correspond with the wiring diagram for ease of service and identification.
11. Complete "as built" wiring schematics shall be provided with the vehicle. General wiring diagrams will not be accepted.

- D.** Electrical components that may require servicing or replacement shall be readily accessible through access panels or covers. Installation of aftermarket electrical components and systems in the engine compartment shall be eliminated to the greatest extent possible.

- E.** All OEM functions originally energized through the ignition switch shall remain as installed at the chassis factory, the only bus body functions to be energized through the OEM ignition switch shall be the exterior lights required to meet FMVSS. All remaining bus body electrical functions shall be initially energized and shut off through a master battery control switch. The location of the switch shall be clearly identified and accessible to the driver in less than 10 seconds. The switch shall be capable of carrying and interrupting the total circuit load.

- F.** An in-line circuit breaker, with manual reset, of adequate capacity for circuit to the wheelchair lift shall be provided in a location in accordance with the lift manufacturer’s recommendations. The circuit breaker shall not be located in the chassis engine compartment. The power wire to the lift shall be securely “P” clamped and protected.

- G.** A driver control console, within easy reach of driver and with unobstructed switches and controls shall be provided. The driver control console shall be of quality construction with sturdy framework, attached with nut and bolt fasteners (no self-tapping screws), and an access panel held in place by stainless steel machine screws. Overhead position is not acceptable. If attached to the OEM motor cover, then particular attention should be made for unit to be attached straight and flush to OEM console with plug in wire connectors to allow for removal and service.

Proposer Meets Section 3.9 Specifications	
Yes	
No	
Noted Deviations (list all section deviations for consideration here):	

3.10 INTERIOR CLIMATE CONTROL

All climate control system controls shall be located within easy reach of driver and shall be located on a control panel.

A. Heating/Defrosting/Air Conditioning Requirements

1. **Front Heat and Defrost:** Chassis manufacturer's in-dash heater and defroster, maximum BTU rating available.
2. **Rear Heat:** At minimum one output auxiliary heater mounted to the floor in the rear passenger area and identified on the floorplan provided by the manufacturer.
 - a. The rear heater system shall be equipped with an electric operated heater control valve to be activated by the heater on/off switch. The total output of the auxiliary heater system shall not be less than 65,000 BTU.
 - b. Heater booster circulator pumps are required to force air up and assist in proper circulation of air to rear of the bus. Booster pumps are to be activated by the heater on/off switch. If booster pumps are not required, vendor is to explain why.
3. Front and rear heaters are to be controlled by two individual three-position switches (off, low, and high).
4. **Front Air Conditioner:** OEM chassis manufacturer integral front air conditioner rated at 22,000 BTU minimum with factory dual compressor.
5. **Rear Air Conditioner:** Auxiliary rear air conditioner capable of producing 66,000 BTU with 1665 CFM diffused air flow equal.
 - a. The condenser for the air conditioner shall be mounted in the body skirt and shall have a minimum of three fans cooling the condenser with automatic reset.
 - b. The evaporator shall be mounted at the wall ceiling junction at the rear of the bus.
 - c. Evaporator drain shall run downhill from evaporator housing. Elbow, or turn down, shall be a minimum of ½ inch below the outlet on the housing. Drains must be installed to prevent puddles of water from being retained in the system.
 - d. The refrigerant lines to the evaporator must be adequately supported between the wall of the bus and the evaporator.
 - e. All refrigeration, heater and drain lines that enter the passenger compartment shall be encased in a rigid material, fiberglass, aluminum, etc. that harmonizes with the interior to prevent injury to passengers in the event of line eruption. Protective grommets shall be provided at

- points where refrigeration, heater and drain hoses penetrate metal or other materials.
- f. The air conditioning system shall use environmentally friendly refrigerant. The entire air conditioning system, including add-ons, shall utilize the same type of refrigerant supplied by the chassis manufacturer.
 - g. The evaporator and condenser must be matched to the compressor as per manufacturer's recommended installation instructions.
6. All HVAC system hoses and wires that pass within 12 inches of exhaust system shall be shielded in a manner to prevent heat damage.

Proposer Meets Section 3.10 Specifications	
Yes	
No	
Noted Deviations (list all section deviations for consideration here):	

3.11 INTERIOR PANELS AND TRIM

- A.** Sidewall, rear wall, and ceiling trim panels shall be melamine, ABS plastic, FRP, smooth fiberglass gel coat, vinyl, polypropylene fiber or an approved equal, applied in one or more sections. Trim molding of stainless steel, anodized aluminum, FRP or ABS plastic shall be used to cover seams. The trim molding shall be continuous except at the door openings and fuel intake line covers and run the entire length of each seam covered.
- B.** Panels shall be supported to prevent, buckles, vibration, drumming or flexing and particular care shall be exercised to keep the body light fixtures from weaving or bouncing when the bus is in service.
- C.** All interior panels, materials, and treatments shall be flame retardant in conformance with FMVSS 302 and treated to be easily cleaned as well as scuff and scratch resistant.
- D.** The interior of the driver's area shall be padded with 1/4-inch foam and covered with vinyl to aid in noise reduction.
- E.** All sharp corners, edges and protruding hazardous surfaces shall be eliminated.
- F.** There shall be no open seams between trim panels.
- G.** All panels shall be the same color and coordinated with the interior color of the vehicle.

Proposer Meets Section 3.11 Specifications	
Yes	
No	
Noted Deviations (list all section deviations for consideration here):	

3.12 INTERIOR/EXTERIOR SIGNAGE

All signs required by state and federal law regarding safety and operating procedures shall be affixed to the vehicle exterior and interior. Manufacturer shall place two international symbols of accessibility, at least 15.24-cm (6") square, on the vehicle in accordance with ADA regulations. Interior and exterior signs may be decals. Decals must be 3M premium grade vinyl or equivalent.

Proposer Meets Section 3.12 Specifications	
Yes	
No	
Noted Deviations (list all section deviations for consideration here):	

3.13 SEATING

A. General

1. The Proposer shall provide a detailed floor plan and seating drawing, which is to scale and meets passenger-seating and loading requirements. Drawings, at a minimum, shall show the location and dimensions of all seating positions, wheelchair locations, drivers position, aisles, and doors. In addition, all major body interior and exterior dimensions, along with gross vehicle weight rated axle loads, must be shown.
2. All seating, including driver, shall comply with FMVSS 302.

B. Passenger Seating

All passenger seating shall be Freedman Featherweight Mid-Hi or approved equal and meet the following requirements.

1. Passenger seat frame shall be constructed of steel and meet FMVSS 210.
2. Seat installation shall meet FMVSS 207 standards.
3. An energy absorbing padded grab handle shall be provided at the top of each **aisle** forward facing seat position and be as wide as practical, depending on seating configuration.
4. Armrests are to be added to all aisle seats, permanent and foldaway.

5. All seats shall be covered with Freedman Level 4 Repel Gem Red fabric or approved equal.
6. Back of permanent ambulatory passenger seats to exclude rear seats should be covered with a plastic protective cover.
7. All metal surfaces shall be chemically cleaned and coated with a corrosion preventative material to provide a long lasting, rust resistant surface.
8. ~~Freedman dual~~ Four (4) 12-volt charging plugs, two located on each side of the bus. DCSS will work with the winning proposer of final location after award. ~~side of middle row (2 each side) or approved equal.~~
9. ~~Freedman~~ Four (4) USB charging ports, two located on each side of the bus. DCSS will work with the winning proposer of final location after award. ~~of rear row (2 each side) or approved equal.~~
10. Each seat position, including foldaway seats, shall be equipped with a passenger restraint system, which meets current FMVSS requirements, intended to hold passengers in a secure seated position during normal operations. All seat belts shall be the Freedman USR (Under Seat Retractor), or approved equal. Seat belts shall meet or exceed FMVSS 207/209 (seat belt assemblies, performance and strength) and FMVSS 210 (seat belt mounting certification). The passenger seats, frames and seat belts should operate as a complete system. Two 24" seat belt extenders shall be provided.
11. Foldaway seats shall be a Freedman model foldaway seat or approved equal. The foldaway seat operation shall require no more than two (2) steps to store or deploy. A cylinder shock must be provided to assist in the controlled storing or deployment of seat. Seat shall include a self-locking mechanism for security. The underneath area of the seat shall appear finished without exposed seat springs or seating material. The design of the foldaway seat shall complement the standard passenger seats. Folding seats must be installed so that rubbing/chaffing does not occur during fold operation. Seat cover must not touch sidewall or structure during fold/unfold. Folding seats must be mounted to steel structure that is an integral part of the final stage builders under floor structure.

C. Driver's Seating

1. A power driver's seat (OEM driver's seat preferred however approved equals can be submitted) shall be provided with forward and rearward adjustment, right side armrest, lumbar support, reclining feature, and high back. The seat shall be upholstered in Freedman Level 4 Repel Gem Red fabric or approved equal to match passenger seating.
2. Driver's shoulder seatbelt must be vertically adjustable.

Proposer Meets Section 3.13 Specifications	
Yes	
No	
Noted Deviations (list all section deviations for consideration here):	

3.14 FLOOR AND FLOOR COVERING

- A.** The sub floor shall be 3/4 inch thick (minimum) marine grade plywood. Sub-flooring must be installed to create a smooth surface to lay the floor rubber.
- B.** Sub floor structure shall be designed and assembled for a minimum trouble free service life of 5 years. The sub floor structural members shall be made from steel with a minimum yield strength of 36,000 psi. Sub floor frame shall be mounted to OEM alternate frame spacers.
- C.** The flooring shall be RCA type 1/8" (minimum) smooth under the passenger seats and 3/16" (minimum) ribbed over the remainder of the floor and step treads. Thickness shall be measured from top of ribs of floor covering. All step edges shall have Altro yellow nosing with band of 2 1/2 inch of bright yellow Altro, or approved equal, inserted into the step edge using contact adhesive running the full width of each step. ~~The tread and step edge shall be bonded into one piece.~~
- D.** An aisle width standee line of at least two (2) inches in width of bright white contrasting color shall be in the aisle just behind stepwell.

- E.** All mating edges of the flooring, step tread and step nosing materials shall be weather sealed and heat welded to prevent water penetration. The height of the sealant bead shall be consistent with the flooring, step tread and step nosing base thickness.
- F.** There shall be molded plastic, fiberglass, hard rubber, aluminum or FRP cove molding between sidewalls and floor for ease of cleaning. The cove molding shall be one continuous piece along each wall except when interrupted by such items as wheelwell, fuel line, mobility lift door and interior corner covers and door openings. Molding shall be covered up the side 10" to run up to the sidewall.
- G.** An access panel for ease in maintenance of the fuel pump shall be provided.

Proposer Meets Section 3.14 Specifications	
Yes	
No	
Noted Deviations (list all section deviations for consideration here):	

3.15 STEPS AND STEPWELL

- A.** Proposers are to specify step height from ground (no load) and for individual riser height for flat (raised) floor configuration. The intent is to have the lowest entry height for seniors and persons with disabilities as possible.
- B.** The stepwell shall be modular design, 14 gauge (minimum) galvanized steel or carbon steel (treated to prevent the effects of corrosion over the life cycle of the vehicle) smoothly and continuously welded into the bus body structure. Stepwell shall be adequately reinforced to prevent permanent deformation or elastic deflection when either step is loaded over the center half with a 300-pound static load.

- C.** An electric heating pad located under the lowest front entry step shall be provided to de-ice the lower stepwell. The lower step-heating element shall be deactivated when the ignition switch is turned off and have a dash on/off switch. The electric heating pad shall have a safety device that prevents the pad, wiring, or bus from being damaged in the event of pad malfunction.
- D.** Stepwell shall be completely enclosed and weather tight when the passenger doors are in the closed position.

Proposer Meets Section 3.15 Specifications	
Yes	
No	
Noted Deviations (list all section deviations for consideration here):	

3.16 DOORS

A. Front Entrance Door

1. The vehicle shall be equipped with an electric, double leaf, outward opening "transit style" door with a center molded, overlapping, safety seal.
2. A rocker switch located in the driver's area shall activate the front door mechanism. Drivers shall be able to operate the door without leaving their seat. The doors shall not be operable unless the vehicle is in park.
3. An exterior weatherproof switch that can open and close the doors shall be provided.
4. An interior safety release mechanism permitting the doors to be mechanically opened in the case of an emergency shall be provided.
5. The front doors shall be double sealed, equipped with material on each section that overlaps a minimum of 1.5" to form a tight seal to prevent water from entering the bus. The seals shall be of automotive quality that does not degrade or crack with aging and mounted in a groove that allows for easy replacement if necessary.

The overlapping center door seals shall be a flexible material that exerts no more than a ten (10) pound force on a one (1)-square inch of any passenger struck by a closing door.

6. A thick rubber threshold seal or brush comb shall seal any gap between the lowest part of the door and the mating step surface greater than 3/8".
7. The front doors shall have a clear opening width of 27 inches (minimum) as measured from inside edge of doorframe, and full height of 80 inches (maximum) clear "walk in" headroom as measured from the top of the front step to the underside of the front doorframe header.
8. The front doors shall be equipped with windows of adequate size and placed to allow the driver to see and judge curb locations when stopping. Window glass shall be single pane, tinted, and tempered safety glass conforming to all applicable FMVSS requirements.
9. Suitable padding to protect the heads of boarding or exiting passengers shall be installed on the lintel of the front entrance doorway.

B. Wheelchair/Mobility Lift Door

1. The mobility lift door shall be two entry doors.
2. Mobility lift doors shall be located in front of the vehicle next to the front passenger door.
3. Mobility lift doors shall provide 68 inch (minimum) of clear walk-in headroom as measured when lift is in full raised usable position. The lift doors shall have a clear opening width adequate for the ease of operating the mobility lift being supplied with this vehicle. Door fasteners or hardware, etc. shall not protrude into the door opening.
4. Lift doors shall be constructed utilizing a stainless steel or aluminum subframe. Wood framing is not acceptable. Door opening frame will be powder coated to match vehicle interior.
5. A factory-installed gas shock at top of each door to assist in maintaining an open or closed position shall be installed. An additional door tether shall be installed that will prevent the doors from opening past 100 degrees.
6. Lift doors shall have a glazed window that is viewable from the wheelchair positions inside the vehicle and meets all applicable FMVSS and ADA requirements.
7. Padding shall be installed inside the vehicle over mobility lift door frame header.
8. The doors shall have a "door ajar" light and alarm, which will alert the operator when the doors are not securely closed and latched.

C. Rear Emergency Door

1. The rear emergency exit door shall be 32" wide by 54" high and have stationary windows in the upper and lower halves of the door.

2. Rear emergency door shall be equipped with a securement device to hold the door safely in the full open position. Cord, rope or strap securement devices will not be accepted. Door spring system shall be bolted to both the rear door and the door header with heavy strength bolts, not rivets.
3. The door shall have a "door ajar" light and alarm, which will alert the operator when the door is not securely closed and latched.
4. An exterior door latch with lock will be provided.

D. Door - General

1. Two (2) sets of keys for all door locks shall be provided.
2. All doors shall be properly sealed to prevent entry of air drafts and water into vehicle interior including spray from commercial vehicle wash equipment and driving rain.
3. Materials used for weather seals shall be designed to withstand varying temperature extremes, road splash, salt and other exterior elements without cracking, leaking, loosening, or deteriorating.

Proposer Meets Section 3.16 Specifications	
Yes	
No	
Noted Deviations (list all section deviations for consideration here):	

3.17 SERVICE COMPARTMENTS AND ACCESS DOORS

- A.** Access for maintenance and replacement of equipment shall be provided through panels and doors that appear to be an integral part of the vehicle.
- B.** Access opening or doors in floor of vehicle interior shall be properly secured and sealed to prevent entry of fumes and water into the vehicle

interior. Method of sealing shall provide for removal and replacement of access doors without damage to sealing requirement.

- C.** A lockable driver’s storage compartment shall be provided, preferably as part of the vehicle interior, not a separate locked box installed under a passenger seat.

Proposer Meets Section 3.17 Specifications	
Yes	
No	
Noted Deviations (list all section deviations for consideration here):	

3.18 WINDSHIELD AND WINDOWS

- A.** The windshield shall be OEM glazed laminated glass and uniformly tinted. Windshield shall have a heavier tint band above eye level, if available from OEM. The windshield will be equipped with two-speed electric windshield wipers with intermittent feature.
- B.** Side windows shall be a flat black, aluminum frame, egress transit type or top T-sliding panel type that meets all applicable FMVSS requirements. The T-sliders shall be located at the top of the window. Minimum passenger window size shall be 30 inches wide by 36 inches high.
- C.** Passenger window glazing shall be tinted to permit 30% light transmission (maximum) bronze or grey tint. All glazing shall meet all applicable FMVSS requirements.
- D.** Two (2) emergency exit windows shall be provided on each side of the vehicle. These windows shall be top hinged and meet the specifications described in item “B” of this section. Decals with instructions as to their use shall be provided and be permanently fastened on the inside of the vehicle, located over or beside the emergency windows. The emergency exit windows shall comply with FMVSS requirements. All emergency exits shall have clear unobstructed openings.

- E.** All windows shall be fitted with durable, firmly installed, weather seals to prevent the entrance of air and water, including spray from commercial vehicle wash equipment and driving rain. Materials used for weather seals shall be designed to withstand varying temperature extremes, road splash and salt and other exterior elements without cracking, leaking, loosening or deteriorating. Caulking around the windows shall only be used as a seal, not to make up for body defects or out of tolerance window openings.

- F.** Drain holes shall be incorporated in the window sash frame to allow interior condensation to drain to the exterior. Body and sash construction shall be such that the sash drain shall prevent entrance or back up of water into the vehicle.

- G.** A full window shall be provided in the transition panel between the windshield and the ambulatory passenger door to eliminate any blind spots. The body panel partition between the transition window and entrance doors shall be as narrow as possible to maximize the driver's view of the area around the entrance door.

Proposer Meets Section 3.18 Specifications	
Yes	
No	
Noted Deviations (list all section deviations for consideration here):	

3.19 LIGHTING

A. Exterior Lighting

1. All exterior lights shall conform to State of Colorado and U.S. Department of Transportation requirements.
2. All exterior rear and marker bus body lights to be voltage regulated light emitting diode (LED) with direct termination and come with a protective lens coating for protection against scratching and UV degradation.

3. Rear exterior light configuration shall include red brake lights (standard and center mounted), amber turn signals, and clear reverse lights. Rear Center High-Mounted Stop Lamps (CHMSL) to be an 18" LED red strip light, low profile surface mount.
4. *Amber* roof marker lights at the front and *red* at the rear, one at each corner, shall be provided and be either flush mounted or surface mounted, protected with a brush guard or by the bus body.
5. Daytime Running Lights are to be provided.

B. Interior Lighting

1. Interior dome lights shall adequately illuminate the passenger area and illuminate whenever the entry doors are open.
2. Interior shall be illuminated with LED low profile strip lighting to provide a minimum of 12 foot-candles of illumination measured at 36 inches above the floor.
3. Driver courtesy light shall illuminate when driver door is opened.
4. LED stepwell lights shall be provided to illuminate the stepwell at the front passenger door(s). Lights shall be mounted as to not create a hazard for passengers boarding and egressing. Stepwell lights shall illuminate only when the front passenger door is opened.
5. Exterior LED lights at the front and wheelchair lift door areas shall be provided and shall comply with the Americans with Disabilities Act. These lights will activate only when the doors are open.
6. Wheelchair lift lights, which illuminate the lift device in a 4-foot radius outside at ground level of the door opening, shall be provided in a LED design. The light shall be wired to light automatically when lift door is opened. Lift lights shall be mounted internally in lift area above the lift in the lift door headlining.

Proposer Meets Section 3.19 Specifications	
Yes	
No	
Noted Deviations (list all section deviations for consideration here):	

3.20 FINISH AND COLOR

- A.** All exterior surfaces shall be smooth and free of visible fasteners, wrinkles, and dents. Exterior surfaces to be painted shall be properly cleaned and primed as appropriate for the paint used prior to application to assure a proper bond between the basic surface and successive coats of paint for the service life of the vehicle. Paint shall be applied smoothly and evenly with finished surface free of dirt, runs, and other imperfections. Painted surfaces shall be impervious to diesel fuel, gasoline, corrosive atmospheres, and commercial cleaning agents.
- B.** The proposer shall, as a minimum, provide a low VOC coating system that meets the following minimum requirements.
 - 1. Primer - Corrosion resistant primer that is compatible with the basecoat/clear-coat system.
 - 2. Basecoat/clear-coat System:
 - a. Two part system basecoat/clear coat, low VOC, air dry, stain resistant polyurethane enamel that is ultraviolet light resistant.
 - b. The system shall have hardness, abrasion resistance, gloss retention, flexibility, chip resistance, and good adhesion characteristics.
- C.** Interior finish in the driver’s area shall be a non-reflective material and/or flat grey color.
- D.** Steel wheels shall be painted white.
- E.** Exterior paint and graphic per design example provided in Attachment 1 (DCSS will work with winning proposer on exact information provided on bus). Requirements include paint striping with agency name. Graphics package to include striping with agency logo.

Proposer Meets Section 3.20 Specifications	
Yes	
No	
Noted Deviations (list all section deviations for consideration here):	

3.21 STANCHIONS, GRAB RAILS, AND MODESTY PANELS

- A.** All stanchions and grab rails shall be 1¼ inch stainless steel. Vertical stanchions shall be secured top and bottom with bolts to ceiling and floor metal framing to prevent twisting. All stanchions shall be mounted into the structural metal body member or metal plate.
- B.** There shall be a stanchion, grab rail, and padded modesty panel located at the rear of entrance door.
- C.** 30 inch (minimum) angled grab rails shall be installed at both sides of the entrance door, within easy reach from the ground, to assist passengers in both boarding and egressing. Grab rails shall be mounted to stanchions and structural metal members or metal plates in the sidewalls.
- D.** There shall be a vertical stanchion, grab rail, and padded modesty panel located behind the driver’s seat. There shall be a smoked, shatterproof, plexiglass 3/8” thick panel filling the area from the ceiling to the grab rail and the stanchion to the wall, shock mounted to prevent rattle. The purpose of this panel is to protect the driver from being hit with objects from behind. Panel must not impair driver’s seat adjustments.
- E.** All modesty panels shall harmonize with interior, both in color and design, and shall not provide a hazard to passengers. Modesty panels are to be “through bolted.” Standard screws are not allowable.
- F.** Overhead rails required by ADA provisions shall be at a height of 71 inches to the top of the handrails from vehicle floor. The rails shall be fastened into structural metal body members or metal plates.

Proposer Meets Section 3.21 Specifications	
Yes	
No	
Noted Deviations (list all section deviations for consideration here):	

3.22 MIRRORS

- A.** Two remote control, adjustable, heated side-mounted breakaway exterior rearview mirrors are to be provided, Velvac Model 2020 or approved equal.

The exterior rearview mirrors shall be firmly supported and set to give a clear view past the left and right corners of the vehicle. The size of each mirror shall be at least 6 inches by at least 9 inches. Mirror frames and supports shall have a corrosion-resistant finish. Mirrors shall meet SAE-recommended standards and 49 CFR 393.80 as appropriate.

- B.** A standard chassis manufacturer’s rear vision mirror with non-glare, day-night feature shall be provided.
- C.** One 4 x 13 or 6 x 16 inch interior passenger-viewing mirror shall be provided and mounted in such a way to allow the driver to easily view passenger activity in the vehicle from the driver’s seat.

Proposer Meets Section 3.22 Specifications	
Yes	
No	
Noted Deviations (list all section deviations for consideration here):	

3.23 WHEELCHAIR LIFT

- A.** Wheelchair lift shall be commercial type, Ricon Titanium Klearvue 1,000 capacity K Series or approved equal, meeting ADA and FMVSS 403 and 404 requirements.
- B.** All attachments of the lift assembly to the vehicle shall be done through structural support members. Bolting of any part of the lift assembly directly to the vehicle sheet metal walls will not be accepted.
- C.** The lift assembly shall safely accommodate a *minimum* load of 1,000 pounds. All power units, operating joints, linkage and mounting points to the body shall be certified by the manufacturer as being adequate

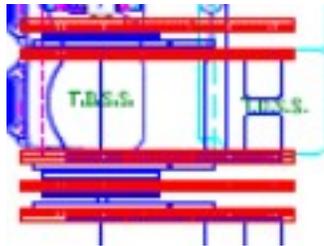
for the minimum load requirements.

- D.** The wheelchair lift shall be interlocked with the transmission and emergency brake in such a manner as to prevent the vehicle from moving with the wheelchair lift door in the open position and prevent the wheelchair lift from being operated until the transmission is in park and the emergency brake is completely set. A dash mounted indicator light will come on to show the system is activated.
- E.** The lift platform shall be secure and stationary when it is in the stowed position. No lift part shall intrude into the vehicle's body more than 18.5 inches when in stowed position.
- F.** There shall be a pressure relief built into the hydraulic system to prevent "jacking" of the vehicle should the power remain on once the lift touches the ground.
- G.** Lift shall be equipped with a manual override to permit lift to be raised or lowered manually in event of power failure or emergency.
- H.** Hand held lift control shall be provided with a minimum 5-foot cord attached so lift may be operated from inside or outside of vehicle. Adequate provisions for safely storing the lift controls, when not in use, shall be provided inside the vehicle.
- I.** Access-Arize Safety Lift Belt or approved equal to be provided.
- J.** A complete set of operating instructions, schematics and a troubleshooting guide shall be included with the lift.

Proposer Meets Section 3.23 Specifications	
Yes	
No	
Noted Deviations (list all section deviations for consideration here):	

3.24 WHEELCHAIR SECUREMENT SYSTEM

- A.** Wheelchair securement system shall be Q'Straint QRT Max, or approved equal.
- B.** Floor anchorage points shall be Q'Straint L Track or approved equal, utilizing corrosion resistant steel or aluminum and usable for front or rear tie downs or shared by both. All anchorage points shall be recessed and nominally flush with the floor to prevent a tripping hazard. Recessed area shall be sealed prior to anchorage point installation to prevent the intrusion of water.
- C.** DCSS requires the following wheelchair L track placement design to accompany each wheelchair position. Price accordingly, as this amount of L Track is in addition to standard L track provided at each wheelchair position. Include this track placement on all submitted floorplans for consideration.



- D.** For each wheelchair securement system installed, a corresponding occupant restraint system shall also be provided. Occupant restraint system shall meet ADA and all applicable FMVSS 403 and 404 requirements. Lap belt, included as part of the occupant restraint system, shall be 108 inches. If a fixed wall mount system for shoulder belts is used, this system should not obscure use of the emergency exit window.
- E.** Storage pouches shall be mounted on the floor or wall in the wheelchair area to safely and securely store tie down straps when not in use.
- F.** Q-Straint Oxygen Bottle Holder with mount locations at each wheelchair position and each side of second row or approved equal.
- G.** Eight Q-Straint Webbing Loops or approved equal.

Proposer Meets Section 3.24 Specifications	
Yes	
No	
Noted Deviations (list all section deviations for consideration here):	

3.25 SAFETY REQUIREMENTS

- A.** Vehicle shall be equipped with one (1) roof ventilation/escape hatch nominally centered in the vehicle roof. Roof ventilation/escape hatch features shall include five-position ventilation (minimum), rubber gasket to prevent leaks, and emergency exit capability.
- B.** The instrument panel shall have lamps sufficient to illuminate all instruments. All instruments shall be accessible for maintenance and repair and shall be mounted so that each instrument and all indicator lights are clearly labeled and visible to the driver. Each vehicle instrument panel shall be equipped with at least the following:
 1. Voltmeter: Of proper size to accurately read (without overloading) additional charge to electrical system when wheelchair lift or auxiliary air conditioning units are being used.
 2. Oil Pressure Gauge: Provided by chassis manufacturer.
 3. Engine Temperature Gauge: Provided by chassis manufacturer.
 4. Fuel Tank Level Gauge: Provided by chassis manufacturer.
 5. Speedometer with Trip Odometer: Provided by chassis manufacturer.
- C.** HawkEye Plus reverse assistance system, or approved equal, *integrated* into the rear bumper.
- D.** Visible and audible warning devices shall be installed to inform following vehicles and pedestrians of reverse operations. Devices should be connected with back-up lights to produce an intermittent sound to warn others while bus movement is in reverse.

- E.** Front and rear "Help" energy absorbing type bumper or approved equal to be provided.
- F.** OnSpot Automatic Drop Down Tire Chains or approved equal. To be permanently installed on vehicle with driver controlled switch on the driver console.
- G.** OEM horn shall be provided.
- H.** Driver's sun visor shall be provided.
- I.** Driver's coat hook and retaining strap shall be provided in the driver's area.
- J.** Vehicle shall be equipped with a driver's side running board. Running board shall be a minimum of 9" deep, maximum of 12". Running board shall extend from the front edge of the front door opening to the rear of the OEM cab. Running board must be designed to hold 300 pounds without permanently changing shape, and be slip resistant diamond plated aluminum, or approved equal.
- K.** A minimum five pound dry powder type fire extinguisher, with gauge and hose, U.L. approval shall be provided. A bracket to securely hold fire extinguisher inside of vehicle shall be provided and vendor shall mount this bracket to a location inside the vehicle.
- L.** A three triangle reflector kit shall be provided and mounted in an easily accessible location.
- M.** Both a sixteen unit first aid kit and body fluid (blood borne pathogen) kit shall be provided and mounted in an easily accessible location.
- N.** All vehicles shall come equipped with:
 - 1. Seat belt cutter
 - 2. Fire blanket
 - 3. Working flashlight
 - 4. Reflective vest
 - 5. Chock blocks (2)
- O.** Chassis OEM manufacturer's AM/FM/CD Radio, plus four (4) speakers, two (2) in front and two (2) in rear shall be provided.
- P.** Vehicle shall be equipped with emergency flashers that operate even if brake pedal is depressed.

Proposer Meets Section 3.25 Specifications	
Yes	
No	
Noted Deviations (list all section deviations for consideration here):	

3.26 WARRANTY REQUIREMENTS

- A.** A description of the local dealer warranty process shall be included in the proposal package including information on how warranty issues are tracked. Parts and labor are to be provided in warranty provisions.

- B.** The body structure manufacturer’s warranty is to be a **minimum** of ~~three (3)~~ **five (5)** years or ~~one hundred thousand (100,000)~~ **seventy thousand (70,000)** miles, whichever comes first, beginning on the date of delivery. During this warranty period, the vehicle shall maintain its structural and functional integrity. The warranty is based on regular operation of the vehicle under the operating conditions prevailing in the purchaser's locale. **Body conversion warranty can be manufacturer’s standard.**

- C.** Specific subsystems and components are warranted and guaranteed to be free from defects and related defects for the times and/or mileages provided below:

Item	Years	Mileage
OEM Chassis – Bumper to Bumper	3	36,000
Powertrain	5	60,000
Electric Components	1	Unlimited

Alternator	1	Unlimited
Heat System	2	Unlimited
Air Conditioning System	2	Unlimited
Electric Door	1	Unlimited
Wheelchair Lift	3	Unlimited

- D.** The warranty shall not apply to any part or component of the vehicle that has been subject to misuse, negligence, accident, or that has been repaired or altered in any way so as to affect adversely its performance or reliability, except insofar as such repairs were in accordance with the contractor’s maintenance manuals and the workmanship was in accordance with recognized standards of the industry. The warranty shall also be void if the purchaser fails to conduct normal inspections and scheduled preventive maintenance procedures as recommended in contractor’s maintenance manuals.
- E.** The warranty shall not apply to scheduled maintenance items, and items such as tires and tubes, nor to items furnished by the purchaser such as radios and other auxiliary equipment, except insofar as such equipment may be damaged by the failure of a part or component for which contractor is responsible.

Proposer Meets Section 3.26 Specifications	
Yes	
No	
Noted Deviations (list all section deviations for consideration here):	